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ABSTRACT

Consistent with the objectives of previous research investigating ways of increasing the range of program choice to television viewers, this study explores the possibilities of taping the original cable broadcast of programs from local commercial and noncommercial stations and repeating them on otherwise empty cable channels at times that would better suit the convenience of cable subscribers. Possibilities for program diversity are investigated, including signals from distant broadcasting stations, local origination of programs on cable, cable networks carrying programs produced for cable, and pay television. The concept of "block repeat" programming is explained, and its possible application to public television, and public affairs programming on commercial stations, and other programming on commercial stations is explored. Some limitations of this method for other types of commercial programming, e.g., entertainment and sports, are indicated. (RAC)

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EXPANDING THE USE OF COMMERCIAL AND NONCOMMERCIAL BROADCAST PROGRAMMING ON CABLE TELEVISION SYSTEMS

PREPARED UNDER A GRANT FROM THE JOHN AND MARY R. MARKLE FOUNDATION

LELAND L. JOHNSON

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PREFACE

This is one of a continuing series of reports published by Rand's Communications Policy Program dealing with the television broadcast and cable industries. Earlier studies have addressed past experience and prospects for program origination directly on cable; policy problems of alternative regulation policies, particularly with respect to carrying signals from distant broadcast stations on cable; the use of cable for delivery of social services; and prospects for both cable networks and additional broadcasting networks.

Consistent with the objectives of our previous studies aimed at assessing ways of increasing the range of program choice to television viewers, this study focuses on a new approach. It explores the possibilities of taping programs from local commercial and noncommercial stations and repeating them on otherwise empty cable channels (in addition to carrying them on cable when originally broadcast) at times that would better suit the convenience of cable subscribers. As illustrative examples, it addresses three possibilities:

- o use of prime-time programs shown on public broadcasting stations, repeated during the day;
- o use of news and public affairs drawn from commercial stations, repeated during prime time;
- o use of other commercial programs including entertainment and sports, repeated at later times.

Our examination of the costs, potential public benefits, and difficulties of these approaches is not intended to provide a definitive analysis, but to raise questions and outline problems in sufficient depth so that interested parties will be stimulated to examine in more detail the feasibility and desirability of these and other approaches to expanding viewer choice.

In the preparation of this report very helpful comments on earlier drafts were received from a number of individuals. Particularly useful were the reactions of Walter S. Baer, Bridger M. Mitchell, and Rodney T. Smith, all of Rand; Herbert S. Dordick of the University of Southern California; and Philip A. Rubin of the Corporation for Public Broadcasting. Of course, any errors or shortcomings remain the sole responsibility of the author.

SUMMARY

A number of approaches are being used on cable television to increase the range of program choice to the viewer: signals from distant commercial, noncommercial, and foreign language broadcasting stations; origination of programs directly on cable; cable networks to distribute programs specially produced for cable; and pay television involving direct payment by the cable subscriber for certain programs or series of programs. However, all of these suffer limitations stemming from problems of generating sufficient audience to cover programming costs, or from restrictions by the Federal Communications Commission designed to protect the broadcasting industry. Taping programs from local commercial and noncommercial stations and repeating them on a "block" basis *exactly* as originally broadcast (including advertising, station identification, etc.) on otherwise empty cable channels may offer a significant increase in program diversity, without the disruptive effects on the television industry that have allegedly resulted from carriage of signals from distant broadcasting stations and from the growth of pay television.

As one example of block repeats, the study examines the benefits and costs of taping four hours of prime-time noncommercial broadcasting and repeating it twice the next day--morning and afternoon. The local noncommercial station would benefit from the additional audience gained during the day when the station is not operating or is broadcasting instructional programs to local schools. The cable operator would also benefit to the extent that the additional programming stimulates new subscriber signups. In this example, the cost of taping and replaying would run to an annual figure of about $27,100--an amount that would be covered by approximately 450 new signups (at a monthly rate of $6.50), or less than 5 percent increase for a cable system with initially 10,000 subscribers. Because the local public broadcasting station would benefit, it might be willing to contribute in offsetting some of these costs, thereby reducing the requirements for new cable subscriber signups. But its willingness

to contribute would depend on the number of viewers within its reach on cable.

Another illustrative example involves news and public affairs programming of commercial stations taped and repeated on otherwise empty cable channels. For this plan to be feasible in large markets, the cable system might carry repeats on a rotating basis from local stations so that over a week or month all local stations would have equal coverage. This rotational system would ensure against undue concentration of control over news and public affairs in the hands of one or a few local stations. For two hours of news and public affairs programming, in addition to recording and repeating four hours of prime-time public broadcasting as described above, the overall annual cost would run to about $40,000--an amount that would be covered by about 650 new subscribers.

Additional possibilities of repeat programming involve entertainment and sports programming drawn from weekend and prime-time commercial television broadcasts. Such extensive taping and repeating of programs would involve a much higher cost than that considered in the preceding examples. However, additional entertainment and sports programming may be the kind of fare that still constitutes an unsatisfied demand sufficiently strong to offset these higher costs. However, some observers would question the social value of additional repeats of mass entertainment and sports, since these are the categories of programming toward which present-day television is so largely aimed—both in terms of new production and in repeats.

Controversy has raged about the growth of cable because of the threat alleged in some quarters that carriage of distant signals by cable would weaken local stations. Whatever the merits of this controversy and of FCC philosophy, these applications would strengthen rather than weaken local stations; for it is the local stations that would benefit from repeat programming.

The benefits and costs of taping and repeating in accordance with these illustrative examples are subject to uncertainties and problems such as the extent to which new subscribers would be attracted

to cable through this additional range of choice, and barriers posed by copyright arrangements and agreements with labor unions regarding payments of residuals. For these reasons a pilot test in several markets would be useful to accumulate data showing the attractiveness of various categories of repeat broadcast programming to audiences who would otherwise not have access; the extent to which financial and political support for local public broadcasting stations would in fact grow; the extent to which use of repeat programming would provide an additional marketable service to the cable operator; and ways that copyright and other problems might be surmounted.

In general, the extended use of repeat programming could either increase or reduce the demand for new programming. If total audience for public broadcasting were to increase as a consequence of repeating prime-time offerings during the day, production of new or better quality public television offerings would be stimulated. If commercially sponsored news and public affairs programs shown during prime time generate additional audience for these categories, this would also constitute a positive stimulus. At the same time, these repeats from public television and commercial broadcasting would compete with each other during prime time so that the effect on each would remain uncertain. Moreover, if the additional kinds of television most people still want lie in mass entertainment, then this category would continue to dominate and perhaps be even more important, relative to public television and to commercially sponsored news and public affairs, than it is today.

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I. INTRODUCTION

That cable systems can offer far more diversity in programming than is possible with over-the-air broadcasting is a much discussed possibility. As has been frequently recognized, broadcasting operates under severe channel constraints that force programming into the mold of mass audience appeal. With the many additional channels offered by cable, however, possibilities exist for specialized programming aimed at relatively small audiences and for flexible scheduling to better suit the convenience of the individual.

However, the diversity so far offered by cable has been severely restricted because of the relatively high costs involved in producing televised materials. The most serious difficulties appear to be not so much in the constraints of channel capacity, but more in the cost of programming. Hence, today UHF channel allocations for broadcasting remain unused in many cities, reflecting the fact that economic viability for new stations would require relatively expensive programming in order to attract sufficient audience to cover costs through advertising revenues. Similarly, many cable systems have many more channels available than are being used.

Much money is spent to produce high-quality programming for commercial broadcasting; smaller amounts are available for public broadcasting. It may be feasible to use otherwise empty cable channels to enable more flexible use of commercial and noncommercial programming for the benefit of viewers. For example, programming from broadcast stations could be taped (with no editing by the cable operator) and replayed on a delayed repeat basis over empty cable channels. Thus Sunday afternoon talk shows and other public affairs programs could be shown also in the middle of prime time to reach an otherwise inaccessible audience. In this way, viewers would have several opportunities to see the program of their choice, rather than being caught in the lockstep, inflexible scheduling of conventional television broadcasting.

To be sure, problems accompany this approach. In addition to the cost of taping and replaying, there would be the difficult problems of copyright clearance and the attitudes of broadcast stations and networks in permitting their programming to be repeated on cable channels--even with all advertising and program content included exactly as originally broadcast. At the same time, repeat programming would expand viewer choice *without* the disruptive effects on the industry that have been alleged in some quarters about the carriage by cable systems of distant signals, and about the offering of special pay cable television channels in competition with commercial broadcasting. A number of offerings, including distant signals and pay television, may be important in expanding viewer choice. But the approach explored in this report--repeat programming--merits consideration as a relatively low-cost way to expand use of existing materials.

This report first reviews briefly other ways that are currently used to increase program diversity, including use of pay television and distant signals. It then explores possibilities of repeat programming, starting with the most promising new-term application--that of using programs from public, noncommercial broadcasting--and then turns to the possibilities of repeating news and public affairs programming, as well as other programming, drawn from commercial stations.

II. THE QUEST FOR PROGRAM DIVERSITY

The potential of large-capacity cable systems to increase the range of program choice--especially in serving the tastes of small "minority" audiences--is widely recognized. A number of mechanisms are presently being used on cable to increase the range of choice beyond that provided by local broadcasting stations. These include:

- o Signals from distant broadcasting stations.
- o Local origination of programs on cable.
- o Cable networks carrying programs produced for cable.
- o Pay television.

SIGNALS FROM DISTANT BROADCASTING STATIONS

Commercial Stations

Use of signals from distant commercial stations is important in inducing viewers to subscribe to cable, especially in geographical areas that do not have extensive local broadcasting service. Carriage of distant signals increases the range of choice insofar as particular programs not transmitted by local stations during the same period are made available to cable subscribers from a distant station. But this mechanism has two primary limitations:

1. To protect local commercial broadcasting stations from potential large-scale loss of audience, the FCC has imposed limitations on the number and character of commercial distant signals that may be carried. When no independent broadcasting stations are located in its local market, a cable system is permitted to import three distant signals if it operates in the largest 50 markets in the country; two distant signals if it operates in the next 50 largest markets; and one distant signal if it operates in markets below the largest 100. In markets containing one or more independent broadcasting stations, a cable system is permitted a maximum

of only two distant signals in the largest 50 markets; one distant signal in markets 51 to 100; and one in markets below 100.* The range of choice among particular distant stations that may be carried by cable operators is further limited by "leapfrogging" restrictions that prohibit skipping over nearby stations in order to carry signals of more distant stations. Moreover, exclusivity rules restrict the choice of program material that may be shown in competition with local station programs. These rules depend on the nature of agreements between local station operators and copyright owners about the degree of exclusive use assured to the local station with respect to the programs it purchases.**

2. Perhaps more important, expansion of program choice is limited by the similarity in the *kinds* of programs offered by local and distant commercial stations during any given time slot. Thus, during a weekday morning the viewer may have a choice among perhaps five soap operas rather than only three. Or during prime time he may have a larger range of comedy-hour and detective series than would be offered by his local broadcasting stations. Or during Saturday morning the choices would be restricted largely to children's cartoons. Thus, even if large numbers of distant signals were available, viewers who, for example, would prefer to see public affairs and news during mid-prime time, or a recently released documentary during the day or after school, would generally remain unserved.***

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*However, cable systems operating beyond 35 miles from *any* broadcasting station may carry an unlimited number of distant signals.

**An extensive analysis of these regulations is provided by S. R. Rivkin, *Cable Television: A Guide to Federal Regulations*, Crane, Russak & Company, Inc., New York, 1974. An analysis of the potential impact of the exclusivity rules has been made by R. E. Park, *The Exclusivity Provisions of the Federal Communications Commission's Cable Television Regulations*, The Rand Corporation, R-1057-FF/MF, June 1972.

***At the same time, the bulk of unsatisfied demand may lie in more of the same kinds of entertainment that already dominate television schedules. This possibility is treated in Sections VI and VII.

Public Broadcasting Stations

Another mechanism for expanding the range of program choice is carriage of signals from distant public broadcasting stations, in addition to those of commercial stations. The FCC permits a cable system to carry any number of signals from distant public broadcasting stations provided that the local public broadcasting station, if one exists, does not object.

The effect of this mechanism on program choice is unclear. Under auspices of the Public Broadcasting Service, some public television programs are transmitted by microwave to local public broadcasting stations throughout the country, to provide regional and national service from a central source. To the extent that stations retransmit these programs simultaneously from the network feed, the problem of duplicate programming would arise among local and distant public broadcasting stations located within the same time zone.* However, local public stations sometimes tape programs from the network feed for later replay to fit more conveniently into their broadcast schedules. To the extent that broadcast schedules are staggered, the carriage of distant signals *would* increase the range of choice to local viewers.

Unfortunately, the quantitative effects of these factors are unknown at this time.** But the potential for expanding program choice through carriage of public broadcasting signals is limited, not only because of similarities in time schedules but also because of the objections that local public broadcasting stations would raise to the carriage of distant signals if they became a serious competitive threat. Concern has been expressed by some public broadcasters on two grounds:

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*The problem of duplicate programming is intensified by the fact that some public broadcasting programs are underwritten by private firms and advertised and promoted nationally to appear uniformly on a specific date and local time.

**However, one could obtain a good idea of the potential of increasing viewer choice by comparing a sample of program logs drawn from distant and local broadcasting stations in particular areas of the country.

1. Carriage of programs from distant public broadcasting stations may reduce financial support by discouraging local viewer contributions to the local stations. Allegedly, the local station would lose its identity in the community if many programs came from other stations, and the viewer associated them with those stations.*
2. Carriage of distant signals aimed at school instruction may erode the financial support of local broadcasting stations by local school boards because, allegedly, a local school system may be less willing to contract with the local station if it can get the same programming free of charge over cable from distant stations.**

As cable systems continue to grow and encompass progressively more millions of viewers and school systems, these arguments will take on additional force. Under these circumstances, attempts by cable operators to expand substantially the range of choice by offering several distant public broadcasting signals would probably be met by strong objection.

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*For example, in 1972 an application for a Certificate of Compliance by Big Valley Cablevision was contested by Central California Educational Television, licensee of Station KVIE in Sacramento, California, on grounds that importation of programming from KQED in San Francisco would erode local support for KVIE. The FCC rejected this argument and granted a Certificate of Compliance to Big Valley Cablevision. See FCC *Memorandum Opinion and Order*, FCC 73-187, released February 23, 1973.

**We should note, however, that financial support from home viewers and from local school boards constitute together a small portion of financial support to public broadcasting stations. In fiscal year 1971 local boards of education contributed 12 percent and subscribers and individuals contributed 6 percent to the total income of all public broadcasting licensees. However, the importance of these sources of support varies greatly by the type of licensee. The 22 stations owned by local public school systems obtained 76 percent of their financial support from local boards of education; these would be most threatened by the carriage of school instructional materials from distant stations. Similarly, subscribers and individuals contributed 12 percent of the total income to the 46 stations owned by community organizations; it is this group, presumably, that would be most concerned about the erosion of its identity with local audiences. Corporation for Public Broadcasting, *Financial Statistics of Public Television Licensees: Fiscal Year 1971*, U.S. Department of Health, Education and Welfare, Washington, D.C., pp. 33-34.

The potential for importation of distant public broadcasting signals has not posed a serious problem for local stations for these reasons: (1) cable systems cover only a small portion of viewers within the broadcasting radius of the local stations, and (2) cable operators have not been strongly inclined to import distant public signals since (a) in many cases importation would involve costs of microwave transmission to the system head-end, and (b) the signals add little to the range of choice for the reasons noted above. Therefore, carriage of distant educational signals would constitute a weak selling point in the operator's attempt to attract additional cable subscribers.

Foreign Language Broadcasting Stations

According to FCC regulations, any number of signals from foreign language stations may be carried into local markets unless a local station broadcasting in the same language makes a compelling showing that it is adversely affected. This provision can add substantial diversity to areas with substantial foreign-speaking audiences, especially where there is no local foreign language station. However, this mechanism is of severely limited utility because the great bulk of the American public would not be served. The only likely possibilities for importing foreign language signals are from U.S. Spanish-speaking stations (most of which are located in the southwestern portion of the country), from border Mexican cities, and from French-Canadian stations along the northern border.*

However, only about 4 percent and 1 percent of the American public have Spanish and French, respectively, as their "mother tongue."**

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*Currently, about eight Spanish-speaking television stations are operating in the United States.

**A breakdown of these figures and a technical definition of "mother tongue" is contained in U.S. Bureau of Census, *Census of Population, 1970, Subject Reports, Final Report PC (2-1a), National Origins and Languages*, Washington, D.C., 1973.

Moreover, some Spanish-speaking stations have strenuously objected to carriage of competitive distant signals into their markets or into other markets they might serve. At this writing the FCC has issued denials in response to several petitions and has granted relief in two cases.*

LOCAL PROGRAM ORIGINATION

Another mechanism for increasing the range of choice is direct origination of programming by the cable operator or by others using his cable system. This involves either live performances or replay of videotape and film. To this time, the diversity offered by local program origination has been limited largely because of the high cost of programming of a sort that would draw anything more than minuscule audiences.** To be sure, use of inexpensive television equipment, such as 1/2-inch videotape machines and volunteer talent, can reduce the per-hour cost of programming far below that of conventional television production.*** With such equipment, and drawing heavily on volunteer talent, cable operators have covered high school sports events, city council meetings, civic activities, and other events of local interest. Outside groups using "public access" channels have been active on some of the country's larger cable systems.†

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*The disposition of these cases is contained in FCC *Memorandum Opinion and Order*, Numbers 73-187, 73-119, 73-632, 74-154, 74-155, 73-1244, and 73-1245.

**Faced with high program costs, cable operators discovered early in the business that they could fill empty channels with so-called "automated" services--for example, a TV camera scanning a bank of instruments (clock, barometer, wind meter, and thermometer), or focused on a stock or news ticker. Although such services are inexpensive and do give viewers useful information on an occasional basis, they do not contribute to program diversity of concern here.

***For cost estimates of such low-cost programming, see Henry Geller, *Mandatory Origination Requirements for TV Cable Systems*, The Rand Corporation, R-1548-FF, July 1974.

†For an interesting account of how public access channels have been used in New York City, see David Othmer, "The Wired Island: The First Two Years of Public Access to Cable Television in Manhattan," Fund for the City of New York, September 1973. A major problem posed

It is also true that use of local origination has been expanding rapidly. According to one survey, 629 cable systems serving over 4-1/2 million subscribers currently originate local programming--about a million more subscribers than were served the previous year.* A range of cable uses is also emerging for highly specialized audiences in the medical, educational, and scientific fields.** As a consequence, locally originated programming is becoming a more lucrative vehicle for commercial advertising. In the survey reported above, commercial advertising revenues are 40 percent higher than those of the preceding year. (However, this computation is made on a very small base; the median advertising revenue figure today is $7,500 per system--only a small portion of the total revenues for most.) Although public access channels are also being offered on more systems, according to the above survey only 36 percent of 175 systems offering public access reported that the access channel was used more than one hour a week, and 22 percent noted that it was not used at all.

Because of the potential importance of local program origination in meeting needs that cannot be served by over-the-air broadcasting, the FCC had once imposed the requirement that in the top 100 markets cable operators with more than 3500 subscribers must originate their own programming "to a significant extent." This rule, which was suspended for reconsideration for many months, has recently been abolished in favor of another requirement that cable operators must make origination equipment available for programming either by itself or by outside groups.***

Also, under a recent FCC ruling, cable systems in the largest 100 markets must make available a channel each for public access, one for educational use, and one for governmental use.

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in determining the value of access channels is that while we know a good deal about what goes out over them, and the costs involved, we have virtually no information about who, if anyone, is watching.

* *Broadcasting Magazine*, September 9, 1974, p. 62.

** A good discussion of such current activities is provided by W. S. Baer, *Science on Television: Alternatives to Broadcasting*, The Rand Corporation, P-5305, October 1974.

*** Federal Communications Commission, *Report and Order*, Docket 19988, December 9, 1974.

Despite the growth of program origination, and effects of FCC rulings, a major barrier is the high cost of programming. The kinds of canned programming that the cable operator or outside groups can afford, or the kind of live coverage that can be provided with largely volunteer talent, generally attract only tiny audiences. The value to the viewer of such programming remains unknown. Generally, the only feedback that cable operators have are a few phone calls in response to the content of a particular program, and the results of occasional polling surveys. While many cable operators feel that local origination does help in some unspecified degree to stimulate the signup of new subscribers, it is widely regarded as of marginal importance. Many operators feel that local origination is worth the cost only so long as that cost can be kept very low. In seeking new subscribers, cable operators have been far more interested in carrying signals from additional broadcasting stations than in offering high-quality, high-cost programming of their own.

As cable systems continue to grow, it may become feasible to upgrade the quality of local origination with the higher cost spread over a progressively larger subscriber base. But the time frame for this evolutionary growth remains in doubt.

This is not to say that local origination and public access are to be ignored, for these activities can at times provide useful outlets for local expression. Cases have arisen in which an event of particularly great local importance can, at low cost, be televised on cable and attract a substantial audience within the community.*

Finally, it is also true that one cannot measure the "success" of a program by merely looking at the size of the audience. Indeed, the very purpose of local origination is to serve small audiences whose needs are left unmet by conventional broadcasting. Yet it is clearly important that *someone* be watching. The value to the viewing public, however that value is measured, should exceed the costs, however low they are, if local origination is to be justified on either economic or social grounds.

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*For an example of the effective use of a local origination channel in Dale City, Virginia, see N. E. Feldman, *Cable Television: Opportunities and Problems in Local Program Origination*, The Rand Corporation, R-570-FF, September 1970.

CABLE NETWORKS

One widely discussed approach for coping with the cost of locally originated programming is to tie cable systems together into regional and national networks. By combining audiences it may become economic to offer far more expensive and better programs than otherwise would be the case. We have had little experience with cable networking. Interconnection has generally taken the form of tying together adjacent cable systems owned by a common entity. (One exception is interconnection of the two cable systems in Manhattan, each owned and operated by a separate firm.)

Recently a cable network—Target Network Television--has been formed to tie together several hundred cable systems in the Midwest, with programming to be originated in Kansas City.* Its program schedule lists much special interest programming, especially of the how-to-do-it variety during the day, and with sports events dominating the prime-time 8 p.m. to 11 p.m. hours. How rapidly such networks emerge and grow over the next few years remains to be seen; but it seems reasonable to suppose that with commercial advertising support and the necessity to attract new cable subscribers as the financial underpinnings, the growth of cable network will be based largely on mass audience appeal--sports, entertainment, and movies--similar to that of the broadcast networks affiliates and of other commercial stations. To the extent that this pattern does emerge, the addition of a cable network in a local market would have much the same effect on expanding viewer choice as would the carriage of an additional commercial broadcast station.

We can also expect that the costs of programming will continue to pose a problem. This problem has been highlighted in a recent study by Booz, Allen, and Hamilton, as described in one source:

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*For a brief descrip ion, see *Advertising Age*, June 24, 1974.

> National network of cable systems linked by domestic communications satellites is technically feasible--once sufficient spacecraft are in orbit. But programming to put on that system remains a problem. That's reaction of those who have seen major CATV-satellite study just completed by Booz, Allen & Hamilton consultancy. While observers find little fault with hardware cost estimates of report--conducted for 44-member Cable Satellite Access Entity—few can figure out how cable industry will be able to acquire competitive software.*

PAY TELEVISION

Perhaps the most promising way to expand program choice is the addition of programs paid for directly by those who watch. As has been so frequently observed in the past, advertisers are willing to spend only a few pennies per hour per viewer. This expenditure reflects poorly the value of certain programs to viewers. In some cases, viewers may be willing to spend much more than a few cents per hour; yet because they are not given the opportunity to pay, programs unattractive to advertisers are not presented.

By permitting viewers to pay, so the argument goes, a potentially far wider choice of programs could be offered. Although the audience may be unattractively small by commercial advertising standards, it may still be large enough in size and strong enough in interest to be willing to pay a sufficient amount to cover the cost of producing and disseminating programs that otherwise would not be available.

A special pay channel (generally called "pay cable") is currently being offered on about 50 cable systems, with about 100,000 subscribers signed up for the special pay service.** In addition, pay channels are being employed in a number of closed circuit television systems in hotels. In almost all these cases, movies are being offered that are newer than ones available on commercial television (and uninterrupted by advertising, that is itself another form of diversity). Thus, the

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*_Broadcasting_, August 5, 1974, p. 5.

**These estimates are taken from the comments of Paul Kagan Associates filed with the Federal Communications Commission in Docket 19554, September 23, 1974, p. 4.

range of choice so far offered by pay cable has been limited. The viewer sees movies that he would also see on conventional television--but sooner.

One major impediment to the growth of pay television is FCC regulatory policy designed to prevent the siphoning of programs from commercial television to pay television, such that the television viewer would end up paying for what he now receives without direct charge. In order to prevent siphoning, the FCC has ruled that (1) movies on pay television must be no more than two years old (except in the case of movies more than ten years old, one per month may also be shown on pay television); (2) no programs of a series with a continuing plot or cast of characters may be shown on pay television; and (3) no sporting events regularly shown on commercial television may be shown on pay television. These rules are designed to prevent programming of the sort that is now shown on commercial television--the typical run of movies several years old and series such as situational comedies. At this writing the FCC is reconsidering these rules and has tentatively set forth a plan to permit expanded access by pay cable to movies and to some sporting events. However, these new proposed rules are still regarded by many as unduly restrictive.*

There has been much discussion of special-interest programming on pay cable--for example, televising of opera, ballet, and other stage productions--but so far little action has been taken.** Perhaps as cable systems continue to grow and encompass additional millions of viewers, such special-interest programming will become economically viable. But again, the time frame for this evolutionary growth remains in doubt. Much depends on the growth of pay cable, carrying movies and sports, that might provide an economically viable base on which special-interest programming could piggyback at low additional cost. It is generally agreed that special-interest programming by itself is not a sufficient base for pay cable operations.

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*For a recent report of these tentative liberalized rules, see *Broadcasting*, November 18, 1974, p. 5.

**For an extensive discussion of the potential of pay cable for such special application see the collection of papers, Richard Adler and Walter S. Baer (eds.), *The Electronic Box Office, Humanities and Arts on the Cable*, Aspen Workshop on Uses of the Cable, 1974.

III. THE USE OF BLOCK REPEATED PROGRAMS

Another potential source of increasing viewer choice, one unused to this time, is what we shall call the "block repeat" of programs shown on public and commercial television stations. The term "block repeat" is defined as unedited replay of programs *exactly* as originally presented, with commercial advertising, station identification, and whatever else was originally broadcast. Programs from broadcast stations would continue to be carried on cable as they are now, but would be taped for delayed replay in addition to the original showing. Depending on how times are staggered between original showings and replay, and the particular programs involved, the range of choice to viewers could be substantially increased.

For example, the programs shown during prime time on television stations could be taped and replayed on cable the next day, to suit the convenience of those who would prefer to watch at that time. Today a broadcast station is led to choose a set of programs that together will maximize its audience. The station typically schedules programs aimed at housewives during the day, children in late afternoon and on Saturday, public affairs for a relatively small Sunday afternoon audience, sports on Saturday and Sunday, news on the fringes of prime time, and relatively high-cost entertainment series for mass-audiences during prime time. Thus the television industry operates as a kind of snapshot, lockstep service which provides particular categories of material at certain times and not at others.* If one wants to watch a particular program when it is shown, all is well. If not, then the viewer is out of luck. Or the viewer will settle for a second or third choice, or not watch at all, when his first choice is presented only at some inconvenient time.

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*Of course there are exceptions. Programs that have particularly strong appeal such as the Watergate hearings and the House Judiciary Committee debate have been covered extensively and taped for subsequent replay, particularly by public broadcasting stations, to serve the greater convenience of the viewing public. Also, programs on public stations are sometimes shown twice during the week, but usually at the same time during two evenings.

THE VALUE OF FLEXIBILITY

This situation stands in stark contrast to the enormous flexibility offered by the print industry. The reader can scan a whole newspaper at his convenience, skip portions, and reread others. Similarly a book can be perused at the leisure of the reader, and both the book and the newspaper once printed are henceforth available to all.

Such flexibility also characterizes the video cassette industry. But technical and economic problems have so plagued the industry that it is having a difficult time getting off the ground. Under the circumstances, it will probably be many years before video cassettes see widespread home use.*

Intermediate in flexibility between broadcast television and print media lies cable television. Here we have much more capacity than can be made available over the air--hence a less severe channel constraint--but not such a large number that cable can match the flexibility of print. That is, channel capacity is not so great that individual subscribers can request specific programs or portions of programs as they see fit, as they can with the content of newspapers and books.

But even much of the potential flexibility of cable goes unused. By carrying broadcast signals as they are transmitted, cable simply reflects the lockstep pattern of the television industry. To be sure, some cable systems also include local origination, public access, special pay channels, automated services, and the like. But these mechanisms have so far been of limited utility for the reasons discussed earlier.

On the other side, the FCC has mandated that cable systems within the top 100 markets must be built with a minimum capacity of 20 channels, and for each channel used for retransmitting a broadcast signal, an additional channel must be made available for other purposes. Because of

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*Progress in the video cassette field along with accounts of opportunities and problems as they unfold are documented in the monthly *Videocassette and CATV Newsletter*, Martin Roberts and Associates, Inc., Beverly Hills, California.

these rules, and because the additional cost of adding channels is small within the capacity range in which we are interested, many cable systems recently built and planned for the future have capacity well in excess of current uses. A major question facing cable operators, in fact, is what to do with the extra channels.

Many new potentially useful services have been discussed for cable--stillframe information retrieval, instructional uses, alarm services, and others--going far beyond conventional television programming. But these services have yet to be perfected. Typically, 20 or more channels are available on new cable systems.* Five or six are used for carriage of local broadcast stations, three for distant commercial stations, one or two for automated services, one for origination by the cable operator, one for a special pay channel, and the three set aside, as mandated by the FCC, for public access, educational, and governmental use. Together, these allocations leave four or five for other purposes. For those systems with 25 or 30 channels, excess capacity is commensurately greater.

OBJECTIVE OF THIS REPORT

The purpose here is to explore the feasibility of using some of these channels for repeats of programs transmitted by broadcasting stations. By expanding the range of choice well beyond that now available, this approach would clearly serve the interests of the viewing public. While not without problems, as discussed below, this approach does have the advantages of operating at low cost by drawing on programming already produced, and operating in a manner compatible with the structure of the existing television industry (in contrast

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*As of June 1973, 207 of the 3000 cable systems operating in the United States had 20 channels of capacity or more. Nearly 2200 have 12 channels or fewer, but most of these have been operating for many years in small communities without adequate over-the-air broadcasting. *Television Factbook No. 43*, Television Digest, Inc., Washington, D.C., p. 84-a.

to the disruptive effects that have been alleged in some quarters with respect to carriage of distant signals and to the growth of pay television).*

We will concentrate on possible application of block repeats to (1) public broadcasting, (2) news and public affairs programming on commercial stations, and (3) other programming on commercial stations. The particular applications discussed subsequently are offered as illustrative examples and are not intended to exhaust all possibilities. We hope to stimulate additional thinking and analysis in order to determine more rigorously the opportunities and the problems involved in moving in these directions.

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*This is not to say that the existing structure of broadcasting should necessarily be preserved. Nevertheless, in considering new approaches to expanding diversity, the probability of acceptance is obviously greater if they do not seriously perturb the existing way of doing things.

IV. USE FOR PUBLIC TELEVISION

AN EXAMPLE

Consider the following potential use of block repeats: the programs transmitted on the local public broadcasting station during four hours of prime time (say 7 p.m. to 11 p.m.), and simultaneously retransmitted over the local cable system's "public broadcast" channel, are taped either at the head-end of the cable system or at the studio of the public broadcasting station. The tape is then replayed on an otherwise empty channel during the next day, from 8 a.m. to 12 noon and from 1 p.m. to 5 p.m., exactly in the format that was shown the evening before. No deletions, additions, or editing would be involved. During the day, then, two channels would be devoted to public broadcasting--the one regularly used for whatever daytime broadcasting the station undertakes; the other for the prime-time programming repeated from the preceding evening.

This approach has merit on two grounds: First, it would give people at home during the day the opportunity to see prime-time public broadcasting as an alternative to soap operas and other standard commercial fare. With an expanded range of choice, viewers would clearly be benefited, especially since prime-time coverage generally includes the highest quality programming that public broadcasting has to offer. Second, the total audience for public broadcasting would likely increase, although effects run in several directions that need exploration:

a. To the extent that viewers watch block repeats during the day when otherwise they would have watched the same programming during prime time, then the total audience would not rise; it would only shift from evening to daytime viewing. Although some such shifting would take place, it would undoubtedly not be complete. Some who view the daytime public programming may have preferred to see it during prime time, but the TV set is preempted by other

members of the household who wish to see commercially sponsored programs during the evening hours. Others may view prime-time public television repeated during the day because they prefer it to commercial daytime programming but *not* to commercial prime-time programming. For both of these reasons the audience for public television, on balance, would expand.

b. To the extent that daytime audience for prime-time repeats is drawn away from the regular daytime programming transmitted by the public broadcasting station and shown on the regular "public broadcasting" cable channel, total audience again would not rise; it would only shift from one cable channel to another--both carrying noncommercial programming. However, there are three reasons to conclude that this shift would not be complete: (1) during the day many local stations carry predominantly school instructional programming of little interest to a general audience; (2) some local stations do not operate during much of the day but go on the air during late afternoon; and (3) for the stations carrying general interest programming during the day some shift in viewing would take place, but it would not be complete insofar as some viewers would prefer the regular daytime programs, especially those designed to cater to more specialized interests.* These preferences would be all the stronger, of course, if the viewer had already seen the prime-time program at the time it was originally presented the preceding evening, or during the other daytime repeat. (Recall that in this illustrative example, each prime-time program is shown twice during the subsequent day.)

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*When school is not in session (summers and other vacations), public broadcasting stations are on the air only about 7 hours a day. In fiscal year 1972, 7 of the 207 stations did not broadcast at all when schools were not in session. During times when school was in session, the 207 public broadcasting stations averaged about 13 hours of daily broadcasting Monday through Friday in 1972, about 6 hours of which was programmed for classroom use. These figures suggest that when school is in session

With these considerations together, the total audience for the station would remain constant only if the audience that views the daytime repeats of prime-time programming is composed entirely of those who would have watched the same programs during the evening and of those who would otherwise have watched the other general interest programming broadcast by the local station and carried during the day on the regular "public broadcasting" cable channel. Although we cannot quantify these effects, it would seem highly unlikely that such extreme conditions would obtain.

THE ROLE IN FINANCING PUBLIC TELEVISION

Much has been written about the severe financial straits of public broadcasting--the minuscule budgets, the numerous proposals to increase funding, the long quest for multi-year politically insulated funding from federal sources, the pending bill before Congress that would provide multi-year funding, and, in general, the continuing dialogue about the financial difficulties, the opportunities, and the problems of public broadcasting.* An expansion of audience would not only serve the public better, but it would also work toward alleviating some of the financial and political problems that beset public broadcasting.

To the extent that audience for public television does expand, local public broadcasting stations might be strengthened. The expansion would stimulate financial contributions by viewers (an important source of revenue for some stations) and could provide an opportunity to build a stronger local constituency important in getting large appropriations at the local, state, and federal levels of government. Moreover, this method of expanding audience choice would not involve the problems of using distant public broadcasting signals where, as we

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a large portion of the broadcast day is confined to classroom purposes which would not be competitive with repeats of prime-time programming during the day. Moreover, when schools are not in session, local public broadcasting stations either reduce their number of hours of broadcast, confined largely to late afternoon and prime-time hours, or are off the air entirely. Corporation for Public Broadcasting, *Summary Statistics of Public TV Licensees*, Washington, D.C., 1972, pp. 78-79.

*For just one example, see: Corporation for Public Broadcasting, *Report of the Task Force on the Long Range Financing of Public Broadcasting*, Washington, D.C., 1973.

noted previously, concern has been expressed that viewer and local school board financial support for the local station would be eroded.

PUBLICITY AND PROMOTION

The block repeat approach also reduces the publicity and promotional efforts required to inform the potential audience of what is to be shown and when. Since prime-time programming would be repeated on a set schedule exactly in the sequence it was originally presented, the audience would know when repeats of particular programs are to be shown based on prime-time schedules alone. To take a concrete example, the program "The Impeachment of Andrew Johnson" was advertised by Los Angeles newspapers to be shown at 8:30 p.m., August 6, 1974, on the local public broadcasting station KCET. With the illustrative repeat schedule of 7 p.m. to 11 p.m. prime-time repeated from 8 a.m. to 12 noon and from 1 p.m. to 5 p.m. outlined above, the interested reader would immediately know that the program would be shown again at 9:30 a.m. and 2:30 p.m. the next day. Of course, announcements would be needed to inform cable subscribers of the availability of the repeats; but this information could be included in weekly or monthly news bulletins cable companies routinely circulate to their subscribers.

The importance of publicity and promotion in building a television audience is hard to overemphasize. As the number of program choices expands with the use of cable channels, the importance of this role is no less great. As a case in point, a major impediment of effectively using public access channels is in informing the intended audience of what is to be shown and when. On the public access channel in New York, for example, there is no advance publicity and promotion of particular events. Thus the viewer is forced to take potluck. Obviously this handicap severely restricts, if not eliminates, the audience for public access programming--all the more so in light of the large number of viewing alternatives available in New York.

COSTS OF TAPING AND REPLAY

The estimated costs for the system are shown in Table 1 for the example discussed above of four hours of taping per evening and eight

Table 1

COSTS OF RECORDING AND PLAYBACK[a]

Capital Costs[b]

VTR machine (IVC-825AC or Ampex 5800) (3 units)	$20,700
Tuner (Conrac ERL-82) (1 unit)	500
Color monitor (low grade) (1 unit)	900
Time base corrector (1 unit)	10,000
Installation	600
Cable channel processing equipment	3,000
Total	$35,700

Annual Operating Costs[b]

Amortization of equipment	
VTR machines (3 years)	$ 6,900
Other equipment (5 years)	3,000
Cost of capital (15% of average unamortized balance)	2,700
Maintenance (10% of capital investment per year)	3,600
Head replacement ($300 every 1,000 hours)	1,300
Videotape stock (300 passes per tape)	
15 hours @ $50	800
Operators	
4 hours per day @ $6/hour	8,800
Total	$27,100

[a]Recording = 4 hours/day (1460/year); playback = 8 hours/day (2920/year).

[b]All costs rounded to nearest one hundred dollars.

hours of repeat the following day. For 1-inch videotape color equipment, the total annual cost is estimated at about $27,000. Although one VTR machine is sufficient for both recording and playback, since the operations are in sequence, an additional VTR machine is required for setup to be patched in at the proper time, and a third is required for backup. Several elements of this cost estimate merit discussion.

First, as shown in Table 1, the overall cost is sensitive to the required amount of manual operator time. The $8,800 figure, comprising about one-third of total cost, is estimated on the assumption that the operator splits duties between this function and others at the cable head-end or at whatever other point of origination is involved. Much would depend on the size and physical location of the operating staff, among which a variety of assignments can be made, including this one.

Second, these estimates are based on use of 1-inch tape color equipment typical of origination facilities found in the cable industry. The quality of transmission is less good than that with the 2-inch tape equipment standard in the commercial broadcast industry (although use of cable instead of over-the-air transmission to the TV set permits substitution of lower quality origination equipment for comparable signal quality at the receiving set). The use of 2-inch machines, involving an expenditure of $75,000 or more, would be prohibitively expensive for the applications considered here.*

As one means of improving quality of signal by avoiding over-the-air degradation, recording the programming at the broadcast studio would be preferable to picking up the signal off the air by the cable system master antenna and recording it at the cable head-end or studio. However, this procedure would require that the recorded tape be physically transported from the public broadcasting station studio to the cable origination facility for replay each day, or that a microwave

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*A high-quality signal at the origination point is important for maintaining good service to subscribers at the ends of the cable system where degradation is more severe, since the signal must travel through many amplifiers to reach the end points. The problem becomes all the more pressing when the cable operator must compete with excellent over-the-air service. In at least one such instance, the cable operator is

or other terrestrial link be installed between the public broadcasting station and the cable system. The choice would depend on the relative location of the cable program origination facility and the public broadcasting station. In Table 1 we assume that the signal is recorded on tape as it is received over the air by the cable master antenna, in the same way that the antenna picks up signals from all other broadcasting stations.

Third, these estimates do not include allowance for the cost of channel time other than processing equipment costs involved in activating and maintaining the channel. This assumption is reasonable as long as excess capacity exists on the system. When, if ever, the excess channels are used for other purposes (as for new services yet to be perfected), then additional costs reflecting the value in these alternative uses would need to be taken into account.

THE QUESTION OF COVERING COSTS

In addition to problems of estimating these costs, there are questions about how they might be covered. Three potential sources of revenue, singly or in combination, might suffice:

1. Increased cable system revenues through new subscriber signups.
2. An increase in subscriber fees.
3. Contributions by the local public broadcasting station.

With respect to the first, if the cable system gains additional operating net income of $60 per year per new subscriber, then about 450 new signups would be required to cover the cost of $27,100--less than a 5 percent increase for a system with initially 10,000 subscribers.*

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installing 2-inch quad equipment, involving two machines which, with peripheral equipment, will cost about $250,000 in order to present movies on his special pay channel in competition with a plethora of over-the-air service in his area.

*The $60 net revenue figure is estimated on the basis of a gross per subscriber revenue of $80 per year minus $20 per year as the additional estimated cost of serving an additional subscriber, under the assumption that additional subscribers can be reached from *existing* cable trunk and feeder lines. The $60 figure is based on estimated annual revenue and cost figures from an earlier study (L. L. Johnson et al., *Cable Communications in the Dayton Miami Valley: Basic Report*, The Rand Corporation, R-943-KF/FF, January 1972, pp. 2-36; 2-40; 2-46; and

(Currently, about 150 cable systems have 10,000 or more subscribers.) Strictly speaking, the important factor here is the additional number of subscribers required to cover costs relative to the number of potential additional subscribers, rather than the *percentage* increase in the subscriber base. However, the number of potential additional subscribers is generally related to the size of the system, insofar as large systems generally have penetration figures sufficiently low so that the number of potential additional subscribers is high. Table 2 discloses that available data for the ten largest cable systems show a larger potential number of new subscribers in all cases than for the ten smallest that exceed 10,000 current subscribers in size, with the single exception of Modesto, California. Thus, large cable systems, such as those in New York and Los Angeles, would be relatively attractive candidates for this application.

The willingness of the public broadcasting station to contribute would depend on the size of the cable system. The station would be more likely to cover a given portion of the costs shown in Table 1 if the cable system encompasses 50,000 subscribers than if the system covers only 1,000.

To the extent that existing viewers value repeat programming it would be possible in principle to increase subscriber fees. However, as a practical matter, subscriber fees are generally increased in relatively large discrete jumps with the approval of the franchising authority, usually the municipality; and it is not likely that the additional value of repeat programming here would be sufficient by itself to trigger a rate hearing and a subsequent increase. Repeat programming could be included in an overall package of additional services that might justify a rate increase. Again, the larger the size of the cable system, the smaller this rate increase would need to be. For a cable system with 10,000 subscribers, the rate increase would be about 25 cents per month to cover the costs shown in Table 1.

2-50). Tables on these pages indicate that for an additional 38,000 subscribers in the fifth year of a "model" cable system's operation in the Dayton metropolitan area, an additional pretax net revenue of about $2.5 million would be generated to provide a net revenue per additional subscriber of $65. From this we subtract $5 to cover additional promotional activities to attract new subscribers to this new offering.

Table 2

CABLE SYSTEM SIZE AND POTENTIAL GROWTH

City and System	Current Number of Subscribers	Potential Additional Subscribers in Front of Existing Plant[a]
Ten Largest Cable Systems		
San Diego, Ca. (Mission Cable)	75,000	N.A.
New York City (Sterling)	57,500	123,500
New York City (Teleprompter)	52,174	N.A.
Allentown, Pa. (Service Electric Cable)	52,000	N.A.
Northhampton, Pa. (Twin County Trans-Video)	50,000	30,000
Suffolk Co., N.Y. (Suffolk Cablevision)	40,000	55,000
Wilmington, Del. (Rollins Cablevision)	36,127	31,400
San Rafael, Ca. (Tele-View Systems)	34,000	18,000
Los Angeles, Ca. (Theta Cable)	33,673	98,000
Santa Barbara, Ca. (Santa Barbara Cable TV)	33,186	21,800
Ten Smallest Cable Systems with 10,000 Subscribers or More		
Winston-Salem, N.C. (Tele-Cable of Winston-Salem)	10,118	13,200
Eau Claire, Wis. (Wisconsin CATV)	10,101	10,600
Sunnyvale, Ca. (Sunnyvale Cablevision)	10,100	14,900
Victoria, Tex. (Tele Tenna)	10,069	4,900
Penn, Ill. (TV Cable)	10,029	3,500
New Philadelphia, O. (Tower Communications)	10,019	2,000
Ventor, N.J. (South Jersey TV Cable Co.)	10,009	2,200
Modesto, Ca. (Cable Comm-General)	10,000	20,200
Jackson, Mich. (Continental Cablevision)	10,000	7,200
Poughkeepsie, N.Y. (Poughkeepsie Cablevision)	10,000	7,500

SOURCE: *TV Factbook*, No. 43, Television Digest, Inc., Washington, D.C., pp. F3a and 379a forward.

[a]Computed by subtracting current number of subscribers from total number of homes in front of plant.

On all three counts, then, the size of the cable system plays a central role. The future interconnection of separate cable systems by terrestrial microwave links or by other means to cover entire metropolitan areas would further improve the financial prospects of this and other new cable services that depend on spreading a fixed cost over a large subscriber base.

COPYRIGHT AND LABOR UNION AGREEMENTS

In repeat showings of programs, copyright and labor union difficulties would arise, perhaps as severe as those in commercial broadcasting considered in Sections V and VI below. To the extent that programs are purchased for one or a few viewings in accordance with a contractual agreement between the producer and the local station, or through the Corporation for Public Broadcasting, special arrangements would need to be worked out to permit the repeat showings of the sort described above. This would probably call for increased copyright payment and perhaps additional residuals to performers.

A major stumbling block with copyright and labor union contractual arrangements is that they are frequently couched in terms of *number* of showings rather than with regard to the total size of audience accumulated through repeat showings. Thus, for example, if a broadcaster prefers to have two showings of a program, each of which attracts 10,000 viewers, he is discouraged from doing so if he must pay twice as much as for a single showing that by itself might attract 15,000 viewers. The solution to this problem is obvious enough: if the two showings are priced at 33 percent higher than the single showing (to reflect the difference in total audience of 15,000 and 20,000), then the broadcaster would not be dissuaded, and the public would be benefited insofar as those who are not able to see the first showing could nevertheless be included in the second. Exploration of how agreements can be established to take better into account audience size (at least as a crude approximation) is one of the most pressing areas for additional research and analysis in evaluating the feasibility of the block repeat approach.

VALUE OF AN EXPERIMENT

Because of the uncertainties discussed above, an experiment extending over two or three years in a few markets, constituting a representative sample of nationwide coverage, would provide useful information for decisions about expanded use. The experiment would be facilitated if waivers could be obtained from copyright owners and labor unions for limited reuse of materials as described above, with the proviso that this agreement would not set a precedent for future negotiations regarding possible future applications of repeat programming in other markets.

Using public broadcasting as the initial focus for the experiment has merit in that funds from Congressional appropriations to public broadcasting, and private foundation support, not tied to advertiser revenues, might be tapped for the modest costs involved in applications limited to a few markets.

Since both the cable operator and the public broadcaster would benefit from the experiment, arrangements for cost sharing and use of cable channels would have to be made. One possibility would involve splitting the costs shown in Table 1 between the station and the cable system, depending on system size and other factors. The agreement could also specify that the channel be leased to the station at no charge; but with the provision that if additional services are developed and carried on cable, so that excess capacity no longer exists, the lease would either be terminated or the public broadcasting station pay an annual fee for the cable channel, reflecting its value in other uses.

Thus, an experimental arrangement may be feasible that would permit the use of excess channels for repeat programming at no cost to the public broadcasting station for channel time and under conditions that would benefit the public, the broadcasting station, and the cable operator. With proper design and evaluation, the experiment would generate data about the attractiveness of public broadcast programming to audiences that otherwise would have only more limited access; the extent to which public financial and political support for local broadcasting stations would grow; the extent to which the use of repeat programming would provide an additional marketable service to the cable operator; and the extent to which revenues could cover copyright and labor residuals in expanded applications.

V. USE OF NEWS AND PUBLIC AFFAIRS PROGRAMMING OF COMMERCIAL STATIONS

Another possibility is to carry repeats of news and public affairs programming shown on commercial stations, in addition to block repeats from public broadcasting described above.* Again the repeat programming would be shown *exactly* as it was broadcast originally, including all advertising and station identification.

A substantial amount of high-quality news and public affairs is shown on commercial stations--but generally at times not convenient to many viewers. Most such programming during the week is shown on the fringes of prime time, while the Sunday talk shows and panel discussions are offered at generally inconvenient times during the afternoon.

Consider an arrangement under which a cable system tapes these programs, and then replays them during the middle of prime time. Surely this would work to the advantage of those who would prefer informational to entertainment programming during prime time. Mechanically, the arrangement would be simple enough insofar as videotape equipment of the sort listed in Table 1 could be used with programs shown on an otherwise empty cable channel.

Whatever audience *losses* for regular prime-time programs take place in competing with repeats of news and public affairs programs during prime time would be compensated, or more than compensated, *for the industry as a whole* by the *gain* in audience for the repeat programming, since as emphasized above, all advertising and station promotional material would be replayed *exactly* as originally

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*The possibility of repeating news and public affairs on cable channels was outlined by Newton Minow, former chairman of the FCC, at the annual convention of the National Cable Television Association, Chicago, Illinois, April 1974.

broadcast.* However, gains and losses for individual stations might not balance out. If news and public affairs for only a single local station were repeated on the cable system opposite the prime-time programming of all local stations (and whatever distant signals are being carried), the other stations would suffer some erosion of revenues during prime time while only the single station would enjoy an increase.

Moreover, if news or public affairs of only one or a few of a large number of local stations were shown on a repeat basis, concerns of the Federal Communications Commission regarding concentration of ownership and control of television programs would become an issue. To avoid undue concentration of control over sources of information essential to an informed electorate, the FCC prohibits a single entity from owning more than one television station in a single market. Also, it has banned cross-ownership between a cable system and a television station operating in the same market; and it is considering at this writing whether cross-ownership between newspapers and television stations in common markets should also be barred. For these reasons the FCC would likely be apprehensive if a single television station were to increase coverage of its news and public affairs through access to repeat programming on the cable system. In the interests of avoiding a greater concentration of control than now exists, the FCC might favor or perhaps require that all stations in the local markets be given equal coverage.

However, at the other extreme, if news and public affairs of all local stations were shown simultaneously on empty channels to equalize exposure, the requirements for channels would rise--one for each station--and videotape equipment would also be required simultaneously

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*Notice that this approach is far different from the "commercial substitution plan" contemplated by the Federal Communications Commission in 1970. Under that plan, cable system operators would have been permitted to import distant signals, delete the advertising on those signals, and substitute advertising sold by local stations as a means of avoiding erosion in the financial base of local stations. Virtually everyone in the broadcast industry was opposed to this plan, and strong

for each channel. Both channel requirements and the cost of taping and replay would mount as the number of local stations increases.

A ROTATIONAL SYSTEM

For these reasons we might consider a rotational system in which over a week or a month local stations sharing an empty cable channel would have more or less equal coverage.

Consider the following illustrative example: a two-hour prime-time period, 8 p.m. to 10 p.m., is made available on an empty cable channel for repeats of news and public affairs programs. Suppose there are five local commercial stations in the market--three network affiliated and two independents. News and public affairs shown during the day and on the early fringe prime time of one local station is shown on Monday, another station's programs are covered on Tuesday, another on Wednesday, and so forth.* The following Monday another local station has the Monday time slot and likewise during the following weeks. In this way each of the local stations over a five-week period would have the slot on Monday, as well as on each of the other evenings.

In markets where there are only three stations, the rotating process would repeat on Thursday and run through Saturday. In markets with several local stations, the repeat programming would extend through all seven days of the week, including Saturday and Sunday. In markets with more than seven (and there are very few), the rotation would have to extend beyond a seven-day period--an arrangement somewhat more awkward than the ones noted above.

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evidence was brought to bear showing that it was technically difficult and economically infeasible. In the approach suggested above, deletion and substitution are not involved. Programs are repeated exactly as they are broadcast; and since the repeats are confined to the broadcasts of local stations, the local stations would benefit directly from whatever additional advertising revenues are generated.

*For the prime-time slot of a particular station, public affairs programming of not immediate news importance and broadcast several days earlier (for example, the preceding Sunday afternoon) might be shown.

By confining the repeats to only local stations, this arrangement would be desirable--in terms of FCC philosophy--in strengthening local stations vis-à-vis distant stations on cable.* One of the most bitter controversies about the growth of cable has been the threat, alleged in some quarters, that carriage of distant signals would weaken local stations. For decades the FCC has pursued the course of allocating spectrum space and adopting other rules to increase the number of local stations, and to strengthen them as effective additional outlets of community expression. Whatever the merits of this long-standing philosophy, the examples described above would serve to strengthen rather than weaken local stations; for it is the local stations that would benefit from repeat programming.

Another advantage of the rotational plan is that it would place local stations in more or less equal competitive positions. The losses that each would suffer during prime time as a consequence of the additional exposure and fragmentation of audience would be more or less compensated by the additional revenues they would each pick up through repeats of their own programming. Although maintaining the relative competitive status of local stations is not (or should not) be a goal of national communications policy, the fact that the rotational system would not threaten that relative status would make the plan easier for the broadcasting industry to accept.

One disadvantage of the rotational plan, unlike the case of public broadcasting discussed previously, is that promotion and publicity of the repeat programming would be more difficult. With each station rotating on a basis varying from week to week, it would be necessary for the cable operator in his weekly or monthly program schedule to include explicitly the times that particular programs would be repeated. In addition, some cable systems have a news and information channel showing schedules of coming events where the listings of the repeats could be included.

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*In principle, channel time could also be offered to distant stations as well as local. However, because the value to distant broadcasting stations of the advertising exposure to the cable audience is generally smaller than that for local stations, it is less likely that distant stations would have an interest in participating.

CONTROL OVER PROGRAM CONTENT

As mentioned above, the FCC's concern about undue concentration of control over sources of information has led it to establish or consider a number of rules designed to maintain a multiplicity of voices. Moreover, the recent Cabinet Committee Report on Cable Communications* recommends that the ownership of cable systems be separated from content, with the requirements that the cable operator himself have control of no more than two cable channels, and that the additional channels be made available for lease to outsiders.

In light of these concerns, the question arises as to who is to select the particular newspaper and public affairs programs to be repeated during prime time. If we were dealing only with entertainment programs, this question would be less pressing; but dissemination of news and public affairs is especially important in contributing to an informed electorate. It would seem undesirable for the cable operator to select the particular programs to be repeated; for he would then have control over virtually all news and public affairs programs shown during prime time. Indeed, through careful selection he would have more control over content than any single television broadcaster in the market could have--a situation clearly contrary to the objective of maintaining a multitude of separate voices. The better solution would be for the broadcast station itself to select the programming to be shown during the time slot allocated to it on the rotational plan. Thus, if a station is given the Monday evening slot, for example, it might select the preceding Sunday afternoon public affairs panel discussion plus the early Monday evening fringe-time local news. Each broadcast station would continue to have control over how its programs are shown, and the number of voices would be no smaller than it is today.

ADVERTISING REVENUES AND COPYRIGHT ARRANGEMENTS

Another problem relates to copyright arrangements for programs with repeated exposures. Because advertisers pay on the basis of rates per

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*Office of Telecommunications Policy, The Cabinet Committee on Cable Communications, *Report to the President*, Washington, D.C., 1974.

thousand viewers, we would expect that a reduction in the amount they would pay because of a reduction in size of audience for a particular showing of a program would be compensated, more or less, by an increase in the amount they would be willing to pay for the program shown at another time with an *equivalent increase* in size of audience. Thus, whether a particular program is shown once, twice, or ten times, total revenues for the industry would not be greatly affected by the *number* of program exposures, so long as total viewing hours remain constant.

However, the revenue gains and losses would not exactly offset each other because advertisers are concerned not only with size of audience but also time of day and day of week as a reflection of their particular needs and preferences. In the case here, the station would sell advertising for a particular news or public affairs program on a *joint* basis; that is, any advertising sold would appear twice: first as originally broadcast and then on the repeat cable channel. Advertiser A, who ordinarily purchases time on only the news and public affairs program, would be expected to pay more in this case by virtue of the fact that his commercial is shown also during prime time (although he might not be willing to pay as much per thousand viewers as other prime-time advertisers). Advertiser B, who purchases time on prime-time entertainment programs, would pay less in total (but not for 1,000 viewers) in this case because of the fact that he would now be competing against news and public affairs programs shown at the same time, in addition to competing with other prime-time programming. The additional amount that advertiser A is willing to pay may not exactly equal the reduction in the amount that advertiser B would pay. If overall viewing time remains constant, some net revenue loss may occur. However, if total viewing time increases as a consequence of greater program choice, then this loss might be compensated, or even a net gain in industry revenues be generated, depending on the magnitude of increase in total viewing.

Another difficulty arises when repeat programming is shown side-by-side with simultaneous retransmission of broadcasting signals.

Commercial advertising on various channels would be shown in juxtaposition that at times might complicate advertiser choices. For example, an advertiser may buy a particular time slot on a local station so that it is well separated in time from the commercial of a competitor. However, when the programming is repeated, the commercial slot he purchased may by chance come up exactly against the competitor's commercial on a different channel. Thus the advertiser may not place as high a value on the additional audience he attracts by the repeat as he would if this problem of juxtaposition were absent.

Further complications arise because news and public affairs programming would likely be a mixture of locally originated, syndicated, and network programs (for example, it might include both locally originated news and a network news program ordinarily broadcast during fringe prime time, a locally originated talk show, or a syndicated documentary). The problem of copyright clearance would vary for each of these. Locally originated material such as the local talk show would pose no serious problem, but syndicated features would be more difficult, since the originating station would have to negotiate ahead of time not only for the showing of the syndicated feature but for the cable repeat.

Similarly, advertising on network programming is a mixture of network-sold advertising on a regional or national basis, and local spot advertising by the originating station. When the network sells advertising on the program as broadcast, the sale would need to be tied not only to the size of audience reached during that exposure, but also to the audience reached through the repeat on the cable system. Sales by local stations to local advertisers would likewise take into account audiences for both the original broadcast and cable repeat. A mitigating factor is that in any event the audiences for news and public affairs shows during prime time would probably be small and not draw substantially from the audiences for mass entertainment programming. Thus, even if adjustments were not perfect, the structure of the broadcast industry would not be seriously strained as a consequence of the small shifts in audience caused by these repeat showings.

This modified structure of programming would bring television closer to the practice of movie theater exhibition where the cost of producing a movie is not recovered during the first few showings across the country, but rather only as the movie enjoys many repeat performances. A problem in television—unlike the movie theater with its box office--is that we do not have an accurate count of the audience for a particular performance. We have local, regional, and national rating systems that give approximations of the number of households watching particular programs at particular times. These systems work well for large audiences, but not for small audiences because of the large margin of error. If many more channels are to be programmed on cable to pick up small audiences through repeats, a more accurate rating system based on larger sample sizes will be needed as the basis for payments by advertisers.

In principle, if total industry revenues remain constant (or perhaps increase if total viewing time expands), then it should be possible to work out copyright arrangements to permit repeat exposures, with *total* amounts going to copyright owners being no smaller than before. However, as noted in Section IV, inflexibilities in copyright arrangements could discourage repeat showings. This problem would be more serious with commercial programming than with public broadcasting, as described earlier, and would probably be even more serious with mass audience entertainment than for news and public affairs of concern here. In all of these cases, additional analysis is needed to determine the costs of increasing sampling of viewing to reflect more precisely accumulated audience size, through repeat showings, as a determinant of copyright payments.

INSTITUTIONAL ARRANGEMENTS

In implementing this approach, the incentives of various groups to participate must be considered. Broadcast stations would have a disincentive insofar as they would face the added expenses of more sophisticated rating schemes, advertising selling expenses, and additional costs in arranging copyright clearance for repeat programming. On the other

hand, they would have a positive incentive to the extent that total viewing time is increased as a consequence of the wider choice, and perhaps more importantly, to the extent that this procedure strengthens the position of local stations relative to distant signals on cable. Since only the signals of local stations would be duplicated, the total audience share of local stations on cable would rise to the extent that their repeat programming attracts audiences from the distant signals. The cable operator would have a positive incentive if it attracts additional subscribers.

Table 3 shows the cost of recording and repeating two hours of programming per day, in accordance with the preceding hypothetical example, in addition to the costs shown in Table 1 for recording four hours of prime-time public broadcasting and repeating it twice during the following day. Estimates in Table 3 are made under the assumption that one channel is used *both* for the public broadcasting repeats during the day and the prime-time news and public affairs commercial repeats during the evening. The annual cost of about $40,200 would be about $4 per year per subscriber for systems with 10,000 subscribers. Or put differently, if the cable system gained an additional net revenue of $60 per year per subscriber, then about 650 new subscribers would have to be signed up to cover the cost. The difference of $13,100 in estimated costs between Table 3 and Table 1 suggests that news and public affairs drawn from commercial stations would constitute a relatively small additional cost, because much of the equipment used for public broadcasting repeats (with the addition of one VTR machine) could be used here as well.

As a beginning, perhaps the cable operator would offer the use of a channel free of charge and cover the direct costs shown in Table 3, while the FCC encourages broadcast stations to participate as one of their contributions as "public trustees" to showing news and public affairs programming. As a consequence of the limitations on radio spectrum space, broadcasters are licensed not simply as firms free to maximize profits but with special public service responsibilities.

Table 3

COSTS OF RECORDING AND PLAYBACK[a]

Capital Costs[b]	
VTR machine (IVC-825AC or Ampex 5800) (4 units)	$27,600
Tuner (Conrac ERL-82) (1 unit)	500
Color monitor (low grade) (1 unit)	900
Time base corrector (1 unit)	10,000
Installation	700
Cable channel processing equipment	3,000
Total	$42,700
Annual Operating Costs[b]	
Amortization of equipment	
VTR machine (3 years)	$ 9,200
Other equipment (5 years)	3,000
Cost of capital (15% of average unamortized balance)	3,200
Maintenance (10% of capital investment per year)	4,300
Head replacement ($300 every 1,000 hours)	1,900
Videotape stock (300 passes per tape)	
20 hours @ $50	1,000
Operator	
8 hours per day @ $6/hour	17,600
Total	$40,200

[a]Recording = 6 hours/day (2190/year); playback = 10 hours/day (3650/year).

[b]All costs rounded to nearest one hundred dollars.

This includes news and public affairs to aid in a more informed public electorate, even though those operations may not be financially remunerative to the station. The FCC has never set down quantitative criteria by which it is to judge performance.* Wide variations exist among stations with respect to the amount of this programming they broadcast. But one feature is common to virtually all stations--news and public affairs are frequently outside of prime time or on the fringes of prime time. By following the approach described in this report, stations would not have to give up their mass entertainment programming during prime time since, as emphasized above, loss of audience to the prime-time programming would be more or less compensated by the gains in audience for the repeat programming. To present news and public affairs to meet the greater convenience of viewers would clearly serve the public interest. Encouragement by the Federal Communications Commission might be sufficient to overcome resistance in bringing about agreements between local stations and cable operators. This encouragement might take the form of explicit FCC recognition at license renewal time that repeat programming of news and public affairs would count directly as the station's contribution in discharging its responsibilities as a public trustee.

As an additional incentive, the cable operator could offer two to three hours on an empty channel to whichever local stations would like coverage. Some stations (particularly struggling independents) would have an interest in joining to increase their exposure, to the extent that their repeats attract additional audience from other stations. (However, this competitive approach would raise questions about undue concentration of ownership and control over informational sources, as described previously.) Once a particular station makes use of the spare channel, then other stations in the same market would be under strong pressure to follow suit.

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*A more extensive discussion of the problem of assessing station performance, especially at time of license renewal, is presented by Henry Geller, *The Comparative Renewal Process in Television: Problems and Suggested Solutions*, The Rand Corporation, P-5253, August 1974.

VI. USE OF OTHER COMMERCIAL PROGRAMMING

Is it feasible for broadcasting stations to also permit taping and replay on cable of other programs—including entertainment and sports--to further increase the range of viewer choice? This application appears less feasible than the preceding ones for several reasons: limitations of channel capacity, costs of tape repeats, problems of copyright clearance, and the juxtaposition of programs and advertising.

LIMITATION ON CABLE CHANNEL CAPACITY

In the preceding examples only one or two cable channels were required to cover public broadcasting repeats, and news and public affairs from local stations shown on a rotating basis. However, if additional programming were carried from local stations and if relative competitive positions of stations were not to be disturbed, block repeats of large portions or perhaps all programs shown by local television stations would be required on a side-by-side basis as originally broadcast. For example, all prime-time programming of all stations could be taped and repeated the following day, but this would require as many additional cable channels as there are local stations. In many metropolitan markets with four, five, or more local stations, an equivalent number of cable channels would be required. While excess capacity does exist on numerous cable systems, this additional demand would probably go beyond channel capacities for many. To reduce this demand, more selective repeats could be attempted, with stations sharing cable channels. But a selective repeat system would pose the problem of placing some local stations at a competitive disadvantage relative to others and would also impose additional requirements for publicity and promotion.

Of course, one can ask why we should be so concerned about relative competitive advantages of stations. If cable channels were available, on a leased common carrier basis, then why shouldn't broadcast stations be permitted to use these channels for their own benefit and perhaps

gain an advantage in the competitive process that characterizes the American economy? The answer is that this would be a satisfactory solution, if indeed broadcast stations took up the offer. But given the fact that broadcasters are likely to be strongly adverse to this scheme, because of problems discussed below, they might be more willing to go along if they were assured that their comparative competitive positions in the local market were not affected. One or two stations (probably struggling independents) might breach the barrier to seek their own advantage against the others, as in a similar situation discussed in the preceding section. But for *any* single station to cope with the problems of copyright and other matters treated below, in order to reach agreement with the cable operator, would be more difficult here than in the cases of limited repeats of news and public affairs.

With respect to advertising, as described previously, if the viewer knows that a particular program shown at 8 o'clock one evening will also be shown at 8 o'clock the next evening, or perhaps at 4 o'clock the following afternoon, and he does not need additional information, then the system may work well without additional publicity and promotion. But if we have highly selective repeats, then whenever the original program is pul ·ized, the time of repeat would also need to be specified. For a l..ge number of local stations and many block repeats this procedure could become unwieldy.

COSTS OF TAPING AND REPEATS

In addition to requirements for additional channel capacity, the costs for taping and repeating would rise as additional dozens of hours per week are included in the cable program schedule. For example, if there were five local stations and prime-time programming were taped for one or two repeats the following day, five VTR machines would be required, along with peripheral equipment and additional manual operator time. Moreover, in taping mass entertainment programming for replay, signal quality would be of greater concern. One-inch color tape equipment used in the earlier cost estimate may be deemed adequate enough for the applications aimed at small audiences. But for mass audience

entertainment fare, it is likely that broadcasting stations would insist on high-quality reproduction, if it is to be permitted at all. This would involve the use of much more expensive 2-inch color machines, each costing $75,000 or more. Depending on the number of local stations involved, the cost of this equipment could easily run to several hundred thousands of dollars. Only for cable systems that could sign up large numbers of additional subscribers as a consequence of the expanded program choice would such an arrangement be economically feasible.*

QUESTIONS OF COPYRIGHT AND PROGRAM ACCESS

The problems noted earlier with respect to copyright and labor union contract negotiations would likely be more severe in the area of sports and mass entertainment programming. In public broadcasting and commercially sponsored news and public affairs, the size of the audience is small enough that the problems could probably be handled without a radical restructuring of contractual relationships.

Perhaps the best approach is to proceed in an evolutionary manner in which public broadcasting is covered first by cable systems. As experience is gained with economic feasibility and the nature of public benefits, the block repeat system would be expanded to encompass commercial news and public affairs. As yet more experience is gained, particularly with respect to contractual arrangements, then larger questions of repeats of entertainment and sports programming could be faced.

JUXTAPOSITION OF COMMERCIAL ADVERTISING AND PROGRAMMING

As noted earlier, the juxtaposition of commercial advertising might pose a problem in block repeats of news and public affairs. This problem would be exacerbated in large-scale repeats of entertainment programming, where advertisers are all the more heavily involved in spending large

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*Without going into further detailed estimates, we note in Table 2 that annual costs run to about 80 percent of the capital costs. If the same percentage holds for more expensive equipment and if capital costs were to rise to say $600,000 to cover five or six 2-inch VTR machines, plus peripherals, then annual costs would amount to about $480,000. With the $30 net annual revenue per subscriber estimated previously, about 16,000 new subscribers would be needed to cover annual costs.

amounts of money for commercial spots under conditions where it would be important that their advertising appear in particular relationship to that of complementary and competing products.

Moreover, use of repeats would disturb the strategies of networks and stations in scheduling programming against competitors. Today a network may schedule a weak program to be shown against a similar one on another network. It is for this reason that a public affairs documentary on one network is frequently scheduled at the same time as a public affairs documentary on another. This is also true for mass entertainment programs. Thus, a network might be thwarted in placing against a competing weak program a weak one of its own, because in the repeat schedule the competing network's strong program may be shown against its weak offering (or conversely). This problem would be mitigated if programs shown originally side-by-side were also repeated side-by-side. But it would not be eliminated, because these prime-time repeats would also be pitted against regular daytime programming.*

THE QUESTION OF PUBLIC BENEFIT

In addition to the above considerations, questions arise about the social value of repeating sports and mass entertainment programming. On the one hand, some observers would question the social value since this is the fare that television today provides so well and in such great quantity. On the other hand, it is in sports and mass entertainment where, even with the plethora of today's offerings, the largest demand by the public may remain. If so, the attractiveness of these additional offerings may be sufficiently great to offset additional costs even if these are higher, as discussed above, than those involved in repeating only public broadcasting programming and commercial news and public affairs. Thus we face an open question: If channel time is made available across the board for noncommercial and commercial programming, should the market be permitted to operate freely to produce

*An additional problem arises in that some programs unsuitable for children are shown late in the evening. If they were repeated during the day, or at other hours during prime time, undesirable exposure to children would occur. Hence, selectivity in repeats would have to be exercised with even greater care.

whatever composition of programming evolves? Or should special measures be taken to encourage or to assure a relatively greater exposure by public broadcasting, and commercial news and public affairs?

VII. THE IMPACT ON NEW PROGRAM PRODUCTION

If individuals were able to watch programs of their choice at times of greater convenience, how would production of new programming be affected? On a priori grounds one would expect some change in favor of minority interest programming. If the total audience for public broadcasting increases as a consequence of repeating prime-time offerings during the day, this would provide a positive stimulus in production of new or better quality public television offerings. Likewise, if commercially sponsored news and public affairs programs shown during prime time causes net expansion in audience for these categories, this would constitute a positive stimulus.

At the same time, these repeats would compete with each other during prime time. Public broadcasting and commercially sponsored news and public affairs programs shown side-by-side may siphon some audience from mass audience offerings during prime time, and they would increase the size of the total viewing audience to the extent that some viewers would otherwise not watch television at all during that time period. But the *distribution* of gains by the public television and commercially sponsored news and public affairs programs remains an unknown. Ordinarily, we would expect that the type of person interested in one would be interested as well in the other, so that public television and commercially sponsored news and public affairs would be more strongly competitive with each other than they would be toward mass audience appeal programming.

If the block repeat scheme were expanded to include mass entertainment fare as well, then prime-time broadcasts repeated during the day might affect the composition of production between daytime and prime-time mass audience programming in favor of the latter, to the extent that repeats during the day would siphon audience from daytime programming. As discussed earlier, we would expect that total revenue for the industry would decline, at a maximum, under the block repeat system to the extent that reshuffling audiences through new combinations

of original showings and repeats would cause a net loss in advertiser revenue. However, to the extent that increased range of choice stimulates total viewing, this loss might be fully compensated, or even more so. In the latter use, total industry revenues would rise to provide a larger base for program production.

Yet other factors must be considered. Easier access to repeats could either encourage or discourage production of new programming, despite a larger total accumulated audience for a particular program category such as news and public affairs as discussed above. An analogy can be drawn from the printing industry. Suppose that, by some magic, after a book is published it disappears from the face of the earth after a period of three years. Would this three-year limitation stimulate or discourage the writing of new books? Or to put it differently, by virtue of the fact that once the book is published it is available indefinitely and through a wide range of sources (book stores, personal loans, libraries, and so forth), what effect does this have on new writing? Here we have two factors working in opposite directions: (1) the disappearance of the book after three years would create a vacuum that would encourage the production of new materials, and (2) the fact that new materials would be limited in their exposure to a three-year period would limit their market and thereby discourage their production.

Similarly in television, would the easier availability of previously produced materials discourage new production (for example, some of the better previously produced public affairs programs being repeated on public television and commercial stations, because of the stimulus provided by easier access to viewers on cable) and thereby weaken the market for additional production? Or would the general easier public access to *all* television materials tend to stimulate their production?

These considerations are of particular importance with respect to the assumption made throughout this paper--that the logical progression of implementing block repeats runs from, first, public television; then to commercially sponsored news and public affairs; and finally to

commercially sponsored entertainment programming. This appears a reasonable progression insofar as problems involved in implementing the repeat process are so formidable that it would seem best to start in areas where they are relatively tractable and then to proceed on the basis of the solutions to tackle progressively more difficult areas. However, were these problems once solved and were block repeats feasible for all ranges of programming, then the composition of programs for the industry could be substantially affected in ways that we cannot now predict.

If the additional kinds of television that most people still want lie in mass entertainment, then this form could continue to dominate and perhaps be even more important relative to public television and news and public affairs than it is today. Suppose that cable operators were to offer on a common carrier basis channels for block repeats of programming. It is not obvious that the first, second, or third channel filled by block repeats would be filled by block repeats limited to public broadcasting or news and public affairs. If the public's unsatisfied demand is still for yet more mass appeal material, then conceivably block repeats would be dominated by more mass entertainment programming. Even though costs are high for this category, as described in the preceding section, nevertheless if a strong enough demand exists to offset these costs, broadcasters may still find that mass entertainment programming is the most economically attractive category to include in block repeats on cable systems--at the expense of news and public affairs. Prime-time entertainment programming repeated both during the day and perhaps the next evening could seriously compete with both news and public affairs in public broadcasting and perhaps take even a larger share of total audience than it does today. Although this situation today would strike broadcasters as bizarre, it is not out of the question in the longer term.

So we end up with a question mark. By giving viewers greater freedom of choice, we cannot foresee the composition of programming after a decade or so, if the problems discussed above can be satisfactorily

solved. But to the extent that a wider rather than a narrower range of choice is viewed as a desirable goal in and of itself (in the same way that we would not want to see all novels disappear three years after they are published), then it would appear worthwhile to move forward in exploiting the opportunities outlined above.

Finally, cable operators relying on repeats from commercial and public broadcasting stations might have less incentive to engage in local program origination themselves. However, to the extent that local stations are doing a good job in news and public affairs--with the major problem being that they are being presented at inconvenient times--then the substitution for the endeavors of the cable operator would not likely result in a social loss. Whatever requirements the FCC imposes on cable operators for local origination would continue to be enforced, although present-day regulations have already been seriously questioned, both within and outside the FCC.*

Public access, and use of channels by educational and governmental institutions could be assured in the same way they are now through government regulation. The extent to which these channels are used would continue to be determined by circumstances that have little to do with the availability of block repeat programming on other channels. The difficulties of attracting audience with public access would persist; and schools and governmental institutions would continue to grapple with questions of how to use most effectively cable channels to which they are entitled under FCC regulations.

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*For example, see Henry Geller, *The Mandatory Origination Requirement for Cable Systems*, The Rand Corporation, R-1548-FF, August 1974.

VIII. CONCLUDING REMARKS

The basic problem with repeat programming is that the value of the additional service to viewers cannot be easily translated into financial incentives for broadcasting stations and cable operators to cover the cost. Thus, even if enough subscribers on a cable system were willing to pay for the additional choices to cover the costs shown in Tables 1 and 3, it would be difficult for the cable operator to collect from them. First he would have the problem of determining that, in fact, enough *are* willing to pay; second, he would face the problem of actually collecting, since rate adjustments are cumbersome and time consuming within the regulatory process to which cable systems are subject.

Even greater difficulty would be faced by broadcasting stations, since they have no mechanism for collecting directly from viewers. For public broadcasting stations some increase in revenues may be generated by voluntary contributions afforded by larger audiences; but these revenues are likely to offset only a small portion of total costs, at least in early years.

For commercial stations, the only additional revenues would come from a total increase in viewing of the station's programming, and it would be difficult to measure the additional audience picked up by repeat programming or the audience lost for programming that faced the additional competition, and to get advertisers to pay for the net gain.

Because of the uncertainties, several experiments would be merited to provide estimates of the value of additional choices to viewers and to explore whether arrangements can be worked out to give broadcasting stations, cable operators, and advertisers sufficient incentive to offer repeat programming.

As an initial step, it might be easiest to deal with public broadcasting stations, not because copyright and labor union problems are any less serious than for commercial stations, but because the complication of dealing with commercial advertisers would be avoided (save for private

firms that underwrite some public broadcasting) and sources of outside funding might be tapped from private foundations and from Congressional appropriations.

In designing experiments several factors should be kept in mind:

- On a temporary basis required for the experiments, it may be possible to obtain waivers for copyright and labor union clearance, or at least to work out simpler arrangements than those typically surrounding the clearance of programming for multiple showings. These problems are probably the most serious barriers to this approach, and need detailed exploration during and after the period of experimentation.
- The sites for the experiment should be selected to reflect sufficient variations in demographic patterns and levels of over-the-air broadcasting so that one can estimate the value of the additional viewing options reflecting a range of relevant circumstances encountered nationally.
- The costs of taping and repeating programming should be refined. Questions remain about whether the signal quality of the retransmission would be sufficiently high (under a variety of conditions) with the equipment postulated in Tables 1 and 3. Also, arrangements for taping programming directly in the studio of the station and transmitting it by transporting tapes or by microwave link to the cable head-end should be explored. The experiments themselves would provide useful information in these areas.
- Audience rating surveys with expanded sample sizes to pick up small audiences need to be devised. The experiments would disclose the costs of these surveys, based on actual field experience. This information would also be useful in estimating the cost of selling advertising for expanding repeats to commercial programming.

If these experiments were successful in showing that the value to viewers would be sufficiently high to more than offset costs, then a better empirical basis would exist for establishing permanent copyright arrangements and for incorporating this approach into other cable systems. In addition, based on this knowledge and depending on the reaction of advertisers, the system might be expanded to include commercial programming, at least for news and public affairs.

This latter possibility would become more real if, as suggested earlier, the FCC were to count as part of a station's responsibilities in producing news and public affairs the coverage afforded by repeats on cable systems. In any event, some combination of experimentation and encouragement from the FCC would be necessary to move ahead. Otherwise, as one reviewer of an earlier draft of this study concluded, "This is one of those very logical ideas about cable that probably will never be able to get off the ground."